

Abstract

A temperature measurement circuit for a dual junction temperature sensor is provided. The temperature measurement circuit is configured to provide separate bias currents to the junctions in the temperature sensor. The temperature measurement circuit includes two signal channels configured to provide an intermediate differential signal from a differential input signal that is received from the temperature sensor. Also, the temperature measurement circuit may include one or more multiplexer circuits that are configured to control the intermediate differential signal. The temperature sensor circuit further includes a control circuit configured to adjust the bias currents and to control the multiplexer circuits such that several different differential voltages can be provided by the signal channels. Additionally, the temperature measurement circuit includes a conversion circuit that is configured to convert the differential voltage to a temperature signal, and to perform error cancellation based on the different differential voltages provided by the signal channels.